WEEKLY EDITION
OF THE
AMERICAN
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BEE JOURNAL

PUBLISHED BY
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EDITOR AND PROPRIETOR,
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☞ We have received a very neat programme for the New Jersey and Eastern Bee-Keepers' Convention, to be held in room 28 of the Cooper Institute, New York, on March 11 and 12.

☞ Mr. W. B. Stephens, of Stephens' Mills, N. Y., has sent us another device for reversible frames. It consists of a bent wire staple to slip into holes in the top and bottom bars, which must be alike provided with them.

☞ Notwithstanding our repeated cautions concerning the sending of newspapers, models, etc., by mail, and enclosing a letter with such, we often receive them. On all such *we have to pay letter rates*. Send your letter separately; and to mark the article in a paper with a line (either in ink or pencil) is quite sufficient. Put your name on the outside with "From" before it, on every package sent, and all will be well; but *never* enclose a letter with a model or in a newspaper.

☞ We are pained to hear that our friend, Mr. Paul L. Viallon, met with a loss of $3,000 by fire on Feb. 28, immediately upon his return from the Bee-Keepers' Congress at New Orleans.

☞ A new pamphlet is on our desk, entitled, "How John's Wife made Money at Home with the Incubator, Bees, Silk-worms, Canaries, Chickens and one Cow." It is a very interesting pamphlet containing 80 pages, and is sold at 30 cents. Published by Hunter MacCulloch, 1828 Reed street, Philadelphia, Pa.

The International Congress.

The meeting of bee-keepers at New Orleans was a very pleasant one, and as 24 States were represented, it gave an excellent opportunity for apiarists to become acquainted with one another, as well as to converse upon the all-absorbing topic of bee-culture. The essays covered much of the debatable-ground of apiculture, and the discussions were in many cases quite interesting and entirely harmonious.

We give nearly all the space of this week's issue of the BEE JOURNAL to the Report, for we know our readers will want to "know all about it" while it is *fresh* in their minds.

We made many *new* acquaintances, and renewed several older ones, and think that all were well-pleased with the meeting.

☞ Mr. John Preston, of Georgetown, Mass., has sent us another device for reversible frames. It consists of a piece of wire attached to the ends of a frame, with the ends bent over to support the frame on the rabbets. The ends are bent so that when one stands out in a line with the top-bar, the other at the bottom of the frame is up close to the side-bar; and when reversed, the wire is turned ¼ of the way around, and forms the "rest" for the frame at the reverse.

☞ "How to be your own Lawyer" is the title of a book on our desk from M. T. Richardson, 7 Warren Street, New York. It contains 500 pages, and is sold for $1.00. It is a useful book for every business man.

☞ Articles sent for publication in the BEE JOURNAL are so abundant that we have to crave the patience of our correspondents. We will publish all suitable articles as soon as possible. The fact that we have such an abundance (without solicitation) is very flattering to the BEE JOURNAL, especially when some of our contemporaries are complaining of a *dearth* of original matter.

☞ Messrs. Geo. W. Meade & Co., of San Francisco, Cal., have sent us their 10th Annual Review of California crops, including comb and extracted honey. They estimate the honey crop of California for 1884 at 9,000 000 of pounds. We will quote it in full next week.

Still Another Pioneer Gone.

Mr. R. M. Argo, another of the pioneers of apiculture, has passed from this state of existence. He died of congestive chills on Feb. 13, 1885, and was buried in the cemetery at Paint Lick, Ky.

It was rather a strange coincidence that Mr. Argo and Mr. Williamson, both prominent apiarists of Kentucky, died on the same day—Friday, Feb. 13—though residing some over 100 miles apart. Twenty years ago Mr. Argo wrote quite extensively for the BEE JOURNAL (then the only bee-paper published in the English language). He was a well-informed and successful apiarist, and breeder of Italian queens.

Mr. Argo was engaged in the saddle and harness business, and his store was swept away by fire on Jan. 2, 1885, and when he died he was just starting anew in a small room, intending to build another store this spring. The building was fully insured, and the insurance was paid. He had been deaf from childhood. His last letter to this office was written on Jan. 29. His end was *peace*.

☞ Fires seem to be quite frequent of late among supply dealers. Mr. J. M. Shuck, of Des Moines, Iowa, reports that his hive stock was burned up some time since, and has delayed his spring operations, but we have just received his elegant 24-paged catalogue stating that he is again prepared for business. His announcements may be found on another page.

☞ Mr. H. R. Boardman's answer to Query No. 30, on page 140, should have appeared on page 117, in reply to Query No. 23. The mistake occurred in our absence by mistaking Mr. B.'s figures.

Catalogues for 1885.—We have received the following:

Bright Bros., Mazeppa, Minn.
D. S. Given & Co., Hoopeston, Ill.
Sumner & Prime, Bristol, Vt.
Geo. F. Williams, New Philadelphia, O.
Joseph E. Shaver, North River, Va.
J. C. Newman & Son, Peoria, N. Y.
Bee-Keepers' Supply Co., New Comerstown, O.
Am. Manufacturing Co., New Carlisle, O.
J. M. Shuck, Des Moines, Iowa.
E. Kretchmer, Coburg, Iowa.
W. S. Cauthen, Pleasant Hill, S. C.
Henry Cripe, North Manchester, Ind.
G. W. McKallip, Hiawatha, Kans.
T. H. Kloer, Terre Haute, Ind.
E. H. Ricker & Co., Elgin, Ill.—Grapes.
E. B. Underhill, Poughkeepsie, N. Y.—Strawberry Plants.
F. E. Fassett & Co., Ashtabula, O.—Plants.
Lewis Roesch, Fredonia, N. Y.—Grape Vines.
W. E. Bowditch, 645 Warren St., Boston, Mass.—Seeds.

QUERIES

WITH

REPLIES by Prominent Apiarists.

Increasing Number of Colonies.

Query, No. 32.—What is the best way to increase 17 colonies of bees to 50 colonies, and also obtain a little surplus comb honey, providing the season is a good one?—Delaware City, Del.

W. Z. HUTCHINSON says: "Put boxes on all the hives. When a colony swarms, transfer the boxes to the swarm. Allow the old colony to cast after-swarms, but give no boxes to them nor to old colonies after they have swarmed."

DR. C. C. MILLER answers thus: "Generally every man's own way is his best way. One way is to form nuclei as early as bees will stand it, and have the earliest ones strong enough to yield some surplus."

G. M. DOOLITTLE replies as follows: "By natural swarming, hiving the first and second swarms, and by getting the 'little surplus' from the first or prime swarms."

PROF. A. J. COOK remarks thus: "I think by forming nuclei to secure queens, and then building up into strong colonies by adding brood. We cannot expect to get much comb honey in average years with such increase."

JAMES HEDDON answers as follows: "I prefer natural increase to any other, though I prefer none at all. If you fear they will not reach the desired number of colonies by natural swarming, you can follow any of the other plans of increase as laid down in the bee-books and bee-papers. Choose the one which you think best fitted to your special environments."

G. W. DEMAREE advises the following: "Rear some queens and have them ready when the swarming time comes. Let every colony swarm, that will swarm in time, and make up the deficit with swarms made by division, giving each a laying queen. Prevent after-swarms by destroying the queen-cells that caused the swarms, and give the parent colony a virgin queen from one to five days old."

J. E. POND, JR., says: "This question is a little vague and indefinite. We are not told whether the question of fancied economy is to be taken into consideration or not. I refer by this to the matter of rearing or purchasing queens. I deem it economy to buy them, and consider that the best way to increase would be to break up 2 or 3 of the colonies best supplied with brood, into nuclei; furnish them with laying queens and build them up, and thus continue till the desired amount of increase is obtained. I increased my colonies in this way last season, from 2 to 10, and produced over 800 pounds of honey, nearly all of which being gathered from goldenrod in 10 days in September."

DR. G. L. TINKER replies thus: "To increase colonies rapidly and get surplus at the same time, build them up strong in early spring; then those colonies which swarm, divide into nuclei with a queen-cell for each. Hive all swarms on 6 or 7 brood-frames; a queen-excluder and a case of sections to be adjusted to the hive previously or soon after."

CORRESPONDENCE.

Explanatory.—The figures BEFORE the names indicate the number of years that the person has kept bees. Those AFTER, show the number of colonies the writer had in the previous spring and fall, or fall and spring, as the time of the year may require.

This mark ⊙ indicates that the apiarist is located near the centre of the State named: ♂ north of the centre; ♀ south; ♂→ east; ←♂ west; and this ♂ northeast; ♂← northwest; ♂↘ southeast; and ♀ southwest of the centre of the State mentioned.

For the American Bee Journal.

A Would-be Critic.

WM. F. CLARKE.

Mr. Jas. McNeill pays his respects to me on page 39 of the BEE JOURNAL, in a way that tempts, if it does not indeed demand reply. That I am "a would-be discoverer" is a charge which I shall neither attempt to palliate nor deny. It is what we all are, if we are worthy the name of bee-keepers.

> "'Twere better to have loved and lost
> Than never to have loved at all."

So it were better to have tried and failed, than never to have made an earnest attempt at discovery. The man who goes through a mechanical routine, never observing, never trying to find out something new, is a very unworthy and ignoble specimen of his kind.

In calmer moments, I have thought that it would have been "chust as weel," (to quote a Highland phrase) if I had announced my "assumed discovery" in a less excited manner; but Mr. McNeill probably knows from his own experience, that "great men are not always wise," and that all philosophers are not stoics. In this cold world, it is a good thing that a man can warm up once in awhile, and there are so many stolid people around us, that a little enthusiasm is needed now and then to give zest and variety to life. A far greater man than I pretend to be, once confessed, "I am become a fool in glorying." But as he was addressing friends and brethren, he put in his plea: "Yet as a fool receive me, that I may boast myself a little." Then with a keen stroke of irony and sarcasm, he added, "For ye suffer fools gladly, seeing ye yourselves are wise." Mr. McNeill can easily make the application of these quotations for and to himself. If I have erred, as probably I have, in being too greatly elated, I have done so in excellent company.

I am blamed for not having made "careful and prolonged experiments," with "observations tested and re-tested," before giving my theory to the apiarian world. What length of time would that have taken? Several years at least. Being in the neighborhood of threescore, life was too short with me to go through so tedious a process. Besides, the job could be done up "a great sight quicker" by asking my fellow bee-keepers to join with me in making the necessary experiments. Moreover, a large number of experiments and observations already made, seemed to point in the direction of my theory, as I have shown in my essay on "Wintering Bees," read before the Rochester Convention. Surely, I ought rather to be commended for giving all and sundry the benefit of my valuable discovery, as I thought and still think it, without delay, and without reserve. There is "nobody hurt" either by my enthusiasm or my precipitancy, even if my theory be incorrect; while if I am right, I deserve to rank among public benefactors, for promptly disseminating a good idea.

Mr. McNeill says that I have "furnished no demonstrable proof that bees really do hibernate;" yet he admits that I have cited "instances where quietness, small consumption of honey, and excellent condition of bees in the spring, would favor the opinion that the dormant state is the natural condition of bees in winter." This admission does not entirely square with the statement that I have furnished "*no* demonstrable proof" of hibernation. But the admission does not fairly state my case as I have presented it to the public. I have "furnished demonstrable proof" that, under favorable circumstances, bees relapse into a state of torpor or semi-torpor, quiescence, or dormancy, during winter in cold or temperate climates; also that small consumption of stores and excellent condition in spring are the results of their so doing. If this is not "demonstrable proof" that bees hibernate, I am at a loss to know what could be "furnished" as such. If Mr. McNeill can show that the dormant state is abnormal, and results disastrously, I will accept it as "demonstrable [*dis*]-proof" of the position that hibernation is the natural condition of bees in winter.

Mr. McNeill tells us that in his opinion "it does not make an iota of difference whether you call this much-desired winter condition of bees quietness or hibernation." He also tries to show that I have only insisted upon what bee-keepers have long known to be important, namely, a quiet state. I do not like to suspect or accuse a fellow bee-keeper of willful unfairness, but my would-be critic, after six months' incubation

upon my theory, has, to say the least, failed to grasp it, and is really fighting a man of straw of his own manufacture. Let me re-state my theory with the utmost possible brevity:

1. Bees naturally fall into a condition of torpor, scientifically known as hibernation, during the winter.

2. The conditions under which they do this in a state of nature, so far as we know them, are as follows: *a.* Protection from the extreme cold by non-conducting walls and roof. *b.* Total absence of upward ventilation. *c.* Sufficient connection with the outer air to make them susceptible to changes of temperature, that they may rouse up at intervals of mild weather, and feed. *d.* A uniform supply of pure, still air through a vertical shaft or column, that ventilation may be regularly carried on according to its known laws. *e.* Total quiet.

3. To winter bees well, it is only necessary to see that they have an adequate supply of food, and that they are in a condition favorable to hibernation. I have shown at length in what respects the ordinary methods of wintering render hibernation impossible, and need not repeat myself here.

Mr. McNeill thinks that hibernation, if proved, will not help us to solve the winter problem, for "have we not still to learn how to make them hibernate?" To some extent we have, but we are not wholly in the dark about the matter. Experiments and observations already made, and what we know about bees that winter in a state of nature, throw much light upon the subject. We have got the principles, all that remains is the practical application of them. For that, further experiment is needed. Hibernation either is, or is not, a law of bee-life. One thing is certain—it was not recognized as such, and among the multitudinous methods of wintering, was not so much as *named*, until "Mr. Clarke" was moved impulsively, rheumatically, and hi-falutinly, "to write in the grandiloquent strain in which he has already written." If hibernation is a law of bee-life, we must conform to it, sooner or later; if it is *not*, why "there's an end on't," and the sooner the better.

Speedside, Ont.

Convention Notices.

☞ The next meeting of the Union Bee-Keepers' Association of Western Iowa, will be held on April 25, 1885, at Earlham, Iowa.

M. E. DARBY, *Sec.*

☞ The Progressive Bee-Keepers' Association of Western Illinois will meet in Bushnell, Ills., on Thursday, May 7, 1885. Let every bee-keeper who can, be present and enjoy the meeting. J. G. NORTON, *Sec.*

☞ The Willamette Valley Bee-Keepers' Association will hold its second meeting at La Fayette, Oregon, on the third Tuesday in June, 1885. All who are interested are invited to attend.

HADLEY, *Sec.*

The International Congress.

SECOND DAY.

The morning session was called to order at 9 a. m., by President Brown, and reports of honey-p oducing flora in North Carolina, Virginia, California and Tennessee were read by the Secretary. Mr. W. S. Hart, of New Smyrna, Fla., was appointed as assistant by the Secretary, and the additional names of members who had arrived since the last meeting were enrolled.

As there was no membership fee, the Secretary could not get quite a number of the names of those who were present; and the following list is therefore very incomplete. The number of colonies of bees reported aggregate 9,542. It is safe to say that about 12,000 colonies of bees were represented by those present.

E. T. Nelson, Preston, Minn.
Chas. Oliver, Springboro, Pa.
C. Thompson, Brighton, Mich.
A. W. Gardner, Centreville, Mich.
B. F. Carroll, Dresden, Tex.
L. Lindsly, Waterloo, La.
J. Van Deusen & Son, Sprout Brook, N. Y.
Martin Emigh, Halbrook, Ont.
Eugene Secor, Forest City, Iowa.
Christian Steiner, Lafayette, La.
Geo. P. Peffer, Pewaukee, Wis.
C. M. Bliss, Fox Lake, Wis.
Jas. Forncrook, Watertown, Wis.
R. Grinsell, Baden, Mo.
T. H. McFarlane, New Smyrna, Fla.
W. S. Hart, Hawk's Park, Fla.
Thos. G. Newman, Chicago, Ill.
C. L. Newberry, Davenport, Iowa.
Oscar F. Bledsoe, Grenada, Miss.
Mrs. W. W. Kinnie, Beloit, Wis.
J. A. Schuddemayer, Black Jack Springs, Tex.
Dr. H. Besse, Delaware, Ohio.
S. J. T. Moore, Monroe, La.
Mary Besse, Delaware, Ohio.
Mr. & Mrs. F. E. Peters, Shelbina, Mo.
J. M. Killaugh, San Marcos, Tex.
S. R. Phillips, Elmira, N. Y.
Dr. J. P. H. Brown, Augusta, Ga.
Amos Abrams, Benton, La.
Mrs. Dr. J. Oren, Laporte City, Iowa.
T. P. Andrews, Farina, Ill.
H. W. Funk, Bloomington, Ill.
P. L. Viallon, Bayou Goula, La.
Dr. Jesse Oren, Laporte City, Iowa.
Miss Anna Saunders, Woodville, Miss.
W. F. Roberts, M. D., Clinton, La.
S. C. Boyiston, Charleston S. C.
Dr. McKenzie, Carrollton, La.
Jas. A. Nelson, Wyandott, Kans.
S. A. Stillman, Louisiana, Mo.
H. A. Stearns, Detroit, Mich.
T. J. Price, Macomb, Ill.
C. O. Perrine, California
J. W. Winder, Carrollton, La.
P. J. Christians, New Orleans, La.
A. G. Woodbury, Darlington, Wis.
Wm. J. Dawson, Caddo, La.
Sylvester Johnson, Irvington, Ind.
I. W. Dark, Columbia, Tex.
H. C. Austin, Austin's Springs, E. Tenn.
J. Vandervort, Laceyville, Pa.
O. R. Flournoy, San Antonio, Tex.
Dr. J. W. Hudson, Mayesville, S. C.
J. G. A. Wallace, Brighton, Ont.,
Mrs. L. Harrison, Peoria, Ill.
A. I. Root, Medina, Ohio.
Ernest Root, Medina, Ohio.
W. P. Laughter, Edna, Tex.
John E. Heard, Pikeville, Tenn.
J. J. Nagel, Davenport, Iowa.
L. Johnson, Walton, Ky.
Thos. F. Kerr, San Antonio, Tex.
Dr. O. M. Blanton, Greenville, Miss.
John Crawford, Pleasant, Ind.
Dr. T. E. Loope, Eureka, Wis.
James B. Mason, Mechanic Falls, Me.
A. W. Fisher, Ganges, Mich.
S. W. Salisbury, Kansas City, Mo.
E. Delmonly, Vermillionville, La
J. A. Field, Bismark, Dak.
J. A. Green, Dayton, Ill.
J. W. Northcutt, Walton, Ky.
J. M. Hyne, Stewartsville, Ind.
Miss Lottie Dushield, San Antonio, Tex.
Dr. D. R. Fox, Jesuit's Bend, La.
S. I. Tyler, Knobnoster, Mo.
M. W. Harrington, Homestead, Iowa.
G. R. Maben, Forest City, Iowa.
Jno. F. Hepp, Boonville, Ind.
Geo. C. Robey, Hazen, Ark.
J. M. Hathaway, Onawa, Iowa.
R. Johnson, Tiffin, Iowa.
W. H. Andrews, McKinney, Tex.
John Wilson, Omro, Wis.
Chas. Dadant & Son, Hamilton,
S. R. Wallis, Lafayette, La.
C. Steim Lafayette La.

The Vice-Presidents, one for each State represented, are as follows:

Arkansas.—Geo. C. Robey.
Canada.—J. G. A. Wallace.
Dakota.—J. A. Field.
Florida.—W. S. Hart.
Illinois.—H. W. Funk.
Indiana.—Sylvester Johnson.
Iowa.—Dr. Jesse Oren.
Kansas.—Jas. A. Nelson.
Kentucky.—Rev. L. Johnson.
Louisiana.—Dr. Roberts.
Maine.—James B. Mason.
Michigan.—H. A. Stearns.
Minnesota.—E. T. Nelson.
Mississippi.—O. F. Bledsoe.
Missouri.—F. E. Peters.
New York.—L. E. St. John.
Ohio.—Dr. Besse.
Ontario.—J. G. A. Wallace.
Pennsylvania.—J. Vandervort.
South Carolina.—Dr. J. W. Hudson.
Tennessee.—H. C. Austin.
Texas.—W. H. Andrews.
Wisconsin.—A. G. Woodbury.

The following persons then presented their credentials as representatives from local societies: J. Vandervort, L. E. St. John, J. G. A. Wallace, W. F. Roberts, J. L. Harris, James L. Meador, T. H. McFarlane, and Sylvester Johnson.

The Secretary read the following by G. W. Demaree, of Christiansburg, Ky., on the

PREVENTION OF SWARMING.

To prevent swarming altogether is one thing, and to so manage the apiary as to reduce increase to the minimum, is altogether another thing. By the constant use of the extractor, swarming can be very nearly, if not entirely, prevented. Of course this applies only when running the apiary for extracted honey.

When producing comb honey, swarming can be controlled to some extent by removing combs of brood from the strongest colonies, from time to time, and inserting empty combs or frames filled with foundation in their places. The first I do not like, because it requires the removing of the honey before it is properly evaporated. I hold that honey can be more cheaply evaporated by the bees than by any artificial process, and in my opinion honey must be finished up by the bees in order to retain to perfection the peculiar combination which makes honey differ from all other sweets. The second plan is entirely too much labor in a large apiary, besides it is impossible to utilize at all times the frames of brood that it becomes necessary to remove.

If we are content to submit to one "prime swarm" from each colony, we can prevent "after-swarms" by having on hand virgin queens from one to six days old, and when a swarm issues, destroy the royal cells and turn loose among the bees a virgin queen. I greatly prefer this method to any that I have tried, and I have experimented, I believe, with every plan suggested through the columns of the bee-periodicals.

If I am asked why this method is superior to the old plan of destroying all the cells but one, or the more feasible plan of destroying all the cells and grafting in a cell just ready to hatch, I answer that bees when under the swarming impulse will start queen-cells immediately, no matter whether you leave one of their own cells, or give them one ready to hatch; and once having started cells, they will have their own way and send out a swarm, or put the bee-keeper to the trouble of destroying cells as long as there is any unsealed larvæ in the hive.

As far as my observation goes, I have never seen a single case when a colony of bees persisted in building queen-cells in the presence of a virgin queen one to four

days old, which had been introduced and accepted when no cells were present. It is hardly necessary to say that virgin queens can be kept in nursery cages at little or no cost.

I assume that not one honey-producer out of ten is so situated that he can sell surplus bees at a price that will cover the cost of hives, combs and winter stores; and as long as this state of things exists, some reliable method which will prevent swarming and put the matter of increase in the hands of the apiarist, will continue to be a deeply felt want. I have experimented in this line for two years past, and will here give my method of "preventing swarming"—a part of which has heretofore been published—hoping that others may help me in perfecting the system of manipulation, or aid in superseding it with a better system.

At the commencement of the honey season I adjust the surplus arrangements on the hives in the usual way, and keep close watch over the bees. When I see "signs" of swarming, I proceed to move the hive from its stand, setting it at right angles thereto. I now place a bottom-board on the old or vacant stand, and proceed to lift the surplus apartment from the original hive and put it on the bottom-board containing combs and bees. One of the frames is supplied with a piece of comb containing larvæ just hatched. I look up the queen in the brood apartment of the parent colony, and put the frame on which she is found, in a comb box. I now shake nearly all the bees from the remaining combs, in front of the surplus apartment, restore the frame with the queen to its place, and close up the original hive, and disguise it by spreading a cloth over it. At the first, the bees at the surplus apartment will show considerable excitement, but will soon start queen-cells and gather honey with the greatest rapidity. They are provided with additional room as fast as they need it. After six or seven days the original hive is gradually turned around so as to bring both entrances practically together.

At the end of ten days, if the season continues good, the queen-cells must be removed from the surplus apartment and substituted with freshly hatched larvæ, and if there is still probability of swarming, the old hive is turned back to its former position, at right angles with the surplus apartment, at a time when the bees are at work in full force in the fields. This will recruit the failing strength of the honey-producing colony at the expense of the parent colony. These manipulations are kept up till the swarming season is nearly over, when the bees are united by replacing the surplus apartment on the old hive, and restoring the latter to its original stand; and the united colony finishes up the honey harvest.

It will be seen that my system contemplates a divided colony during the main swarming season, the queenless division producing the surplus honey, while the parent colony produces the bees. I do not claim that the manipulations which I employ are new; I only claim that the system is new, or in other words, that I have systematized well known manipulations and made them serve a purpose, viz: prevent swarming not hereto known or practiced.

I have no hesitation in saying that by this management I can produce extracted honey in greater quantity and of better quality, and with less labor than by any plan heretofore suggested. By employing the "tiering up" plan no honey need be extracted till near the close of the honey harvest. To produce comb honey by my new system, I have found it necessary to work a case of shallow frames under the section-cases to catch the small amount of pollen which the queenless bees will bring in while building queen-cells.

Mr. Bledsoe (Miss.) did not think it advisable to introduce virgin queens.

Mr. Viallon (La.) advised the clipping of the wings of queens to prevent swarming. He has had virgin queens accepted by the bees 9 times out of 10.

Mr. Muth (Ohio) prevents drone-rearing, and hence has no more increase than he desires. His combs are all worker combs, and he needs no drone-traps nor any other useless fixtures.

Mr. Dadant (Ill.): The cause of swarming is the excess of drones, and these must be disposed of before they hatch, and their place filled with "worker" comb foundation.

Mr. Viallon (La.) said that when a partial honey flow came, the bees would swarm, but when the full honey-flow arrived, the bees never had "the swarming-fever;" when the honey-flow ceases, then they would commence to swarm again. To give the bees extra room would not prevent swarming in Louisiana.

Mr. McKinsey (La.) said that when the bees had no honey to gather, they would swarm, no matter what arrangements were made to prevent it.

Dr. Fox (La.): When there is a full flow of honey, there is no swarming here in Louisiana.

Mr. Bledsoe (Miss.) could, by his method, prevent his bees from swarming.

Mr. Wallace (Ont.) remarked that in Canada, swarming was the rule when the honey-flow was abundant, and was surprised to learn that it was just the opposite in the South.

Rev. L. Johnson (Ky.) who had but just arrived, came up to the President with a white clover blossom in his hand, and presented it to the Congress, as "the first fruits" of the coming harvest. He had plucked it on his way to the meeting, and hoped that it would be regarded by the Congress as the bright omen of a plentiful crop of honey. Here the clover was blooming while the thousands of colonies owned by those present from the Northern and Middle States, were in a state of repose and quietude by reason of the intense cold and the deep mantle of snow under which they were buried.

Mr. J. W. Winder (Thibodeaux, La.) presented the Congress with a large bouquet of honey-producing flowers just gathered near Chicago (*i. e.*, merely 907 miles directly south of its frozen region). This the President presented to Mrs. L. Harrison, of Illinois.

Mr. B. F. Carroll (Tex.) said that he prevented swarming by tiering-up and the use of the honey-extractor.

Dr. Hudson (S. C.) said that increase would come unless better care was exercised and the queen-cells were carefully cut out.

Mr. Flournoy (Tex.) said he prevents swarming by boring holes in the hives to give the bees air, and by tiering-up.

Dr. Besse (Ohio) had 170 colonies last spring, and only permitted 7 swarms to issue. He gave the bees room and "tiered-up."

An essay by Dr. C. C. Miller, of Illinois, was read by assistant Secretary Hart, on

SECTIONS FOR COMB HONEY.

It has become pretty well settled that whoever produces comb honey for market will, in the present state of advancement, use sections. The one-piece section seems at present most popular, and if only one size were to be used, it would probably be the one-pound section. Of this the section 4¼x4¼ inches is most generally used, having a width of nearly 2 inches when used with separators, and about 1¾ inches when used without separators. Different markets require different sizes, and it is possible that entire uniformity of size may never be attained. In Boston the half-pound sections have been sold as high as 5 cents per pound above the price of larger sections, while in Chicago they bring no higher price than the one-pounds. So each one must study his own market, and it may be that on the same market more honey will be sold if customers can select from a variety of sizes.

Undoubtedly there are advantages in favor of having only one size of sections, as manufacturers can afford to sell sections at a lower price if there is something like a standard size, and can afford to keep a stock on hand, so that orders can be filled at any time. Whether separators are to be used or not, each one must decide for himself; certain circumstances or methods of manipulation favoring dispensing with separators more than others.

I have noticed quite a difference, in different years, in the weight of sections; some years the so-called "pound sections" average more than a pound; other years, less. Whether this is due to a difference of seasons or a difference in management, I am not prepared to say. Probably both enter into the problem.

In the year 1883 I experimented with sections 4¼x4¼ inches and of five different widths. The ordinary pound sections, scant 2 inches in width, used with separators, averaged 14.32 oz. per section; the others were used without separators and averaged as follows:

1 5-7 inches.....	averaged 13.8 oz.
1¾ inches.....	averaged 11.76 oz.
1 1-3 inches.....	averaged 10.47 oz.
1 1-5 inches.....	averaged 9.57 oz.

So far as the experiment went to show, it appeared that the sections 1⅝ inches in width suited the notions of the bees the best, and if I should dispense with separators I should prefer sections 1¾ inches in width.

Amongst the problems regarding sections on which light is needed, is the question, what shall be done with unfinished sections at the close of the honey-flow? Last year I extracted part and fed back the honey to get the bees to finish the balance. The result was not entirely satisfactory. What shall be done with the partly finished sections from which the honey has been extracted? Shall they be kept till the heaviest flow comes in the next season, or shall they be used as baits to induce the bees to begin work in supers at the beginning of the honey-flow?

Mr. Wallace (Ont.) remarked that he removed all unfinished sections at the close of the honey-harvest, extracted the honey, let them freeze, and put them away for use next season.

Mr. Newman said that the size of the sections to be used, should be determined by the markets to be supplied, no matter what the preferences of the bee-keeper might be. While the 2-lb. sections were preferred by

some, the demand was great for those holding but a single pound.

The following was read from Frank Benton, of Munich, Germany, on

APIS DORSATA AND THE BEES OF THE ORIENT.

When you are gathered in the Cre cent City, I shall be under the palms which skirt the sands of Great Sahara. Of course it is for our little insects that I go thence, and I shall not fail to tell you, later, of the work and experiences of the journey there, which is undertaken, primarily, for the purpose of establishing an apiary for parties owning estates in the province of Tunis in Northern Africa.

In the midst of the preparation for this journey, and the subsequent journey farther east—to Egypt, Cyprus and Syria—I find it very difficult to prepare anything like an essay proper on any subject, though, did time permit, I would gladly detail a number of my observations and experiences in connection with the bees, bee-hunting, and bee-keeping in India, while on a journey there during the winter of 1880-81 after new races of bees, more especially the great "Apis dorsata." I shall, however, be obliged to ask to be excused if I only present a few lines most of which were hastily written for publication in England a year or so ago.

Most of the "Apis dorsata" colonies which I saw, consisted of but one huge comb attached to a large branch, or to some overhanging ledge of rocks. But this giant honey-bee (it surely deserves the name "honey-bee," although it is not cultivated), does sometimes build several combs side by side, for, when in Ceylon I transferred into a mammoth movable-frame hive a colony which had built three parallel combs in a cavity of the rocks. I found these bees in the Kurunegala district, at a place known to the natives as Bambera-galla ("Apis dorsata" rock). It was a wild forest region, some miles from any habitation, rarely visited, so that I had much difficulty in transporting my hives and implements to the place, and getting up to the top of the rock, which, perched on the side of a mountain, towered up nearly a hundred feet from the lower side. The walls on all sides were either perpendicular or overhanging, and I was at first at much loss to know how we were to get up to the dozen or more huge colonies whose combs were suspended from 2 to 4 feet from one of the overhanging ledges near the summit.

But the natives, of whom there were a dozen present, led me by a crevice just large enough to admit a man s body into the interior of the rock, and, by building a ladder of poles and rattans, we reached a sloping ledge some 40 feet up; thence winding around we came nearer the summit, and at last found a dark passage leading right up through the centre of the rock. The top was nearly level, and about 10 feet square. A cavity enclosed on all sides but one, and partially roofed over, contained a large colony of the "Apis dorsata," which, of course, I had not been able to see from below.

The bees drove us down in the daytime, but at night with the aid of a torch and smoke, I cut out the combs and fitted them into frames which were placed into a hive. I had learned that the best time to approach these bees in their forest lodgment is at night, as they do not fly much then. The frames of my hives were about 12 inches deep by 18 inches long, and so the combs were cut accordingly. I think larger frames would have been better, but not so easy to transport. As the "Apis dorsata" comb is 1⅜ inches thick, the bars of my frames had been made of that width. There were some 50 to 60 pounds of honey in the combs of this colony, and after I had given the bees a fair supply the natives had a nice feast, and some was left over; besides, they eagerly devoured the bits of brood which did not find place in the hive.

As this was towards the close of the season when the bees find little honey, just before the swarming season, it is fair to presume that the amount of honey would be much greater at almost any other time, and the huge combs would have made a nice lump of wax. We secured but one other colony of the dozen that were on the overhanging ledge of rock; the risk to limb and life being too great to try for any more there, we moved on to other localities. Once in movable-comb hives I did not find the "Apis dorsata" intractable, but on the other hand, quite easily controlled, even without smoke; and though its industry did not, during the time that I was in possession of several colonies, equal my expectations in this direction, yet it must be admitted that the colonies were hardly in fair condition to furnish a test case, before a severe fit of sickness which overtook me prevented my giving them proper attention. Then came the loss of the queens after their long journey to Syria, at a time when no brood remained in the hives. All this was but the consequence of my prostration with fever. I do not, therefore, know to this day whether "Apis dorsata" can be domesticated or not, or whether if domesticated it would be a profitable bee to rear. It is, however, an experiment well worthy of trial, and a subject well worth the attention of the highest tribunal in bee-matters which meets on the shores of the New World.

The little "Apis Indica" builds its parallel combs (⅝ of an inch thick, 36 cells on each side of a square inch) in hollow trees, rock cavities, etc., and is cultivated to a certain extent in earthen pots, wooden skeps, etc.; yet I do not believe with much profit. The queens are prolific, and the workers industrious, but it is what the Germans would surely call a swarm-bee. And if kept in movable-frame hives, the great difficulty would be the absconding of the bees at nearly every manipulation, notwithstanding the presence of brood and honey. I have lively recollections of getting the bees of a recently transferred colony whose combs I was fixing a little, back into their hive 6 times in succession on one morning, performing in these processes a good many gymnastics on the roofs and trees in the vicinity of my apiary. Before I learned of this peculiarity of "Apis Indica," I formed quite a favorable opinion of it; though, from all that I saw, I should think that 24 pounds of honey reported as its yield in the Wynaad, rather high, but, of course, I judge merely by the amounts I saw in the combs of the colony which I captured. As the cause for absconding seems to lie in the very excitable nature of these bees, I would recommend the use of smoke only when absolutely necessary. They can generally be driven from combs by blowing them strongly, and become less excited than when smoked. They can be brushed or shaken from the combs easily. As the worker brood-combs are but 5-8 of an inch thick, the bars of frame hives intended for these bees should be but 5-8 wide instead of ⅞ to 1 inch, as for "Apis mellifica," and the spacing but ¼ to ⅜ of an inch at the most.

In Ceylon I found two parties who had procured hives from England, which, of course, were adapted to "Apis mellifica," and had frames whose bars were 7-8 to 1 inch wide, and spaced so as to remain ⅝ to ¾ an inch apart. Of course these parties could not understand why their bees would not do the way the books said that other people's bees were accustomed to do, that is, build the combs regularly, and but one in a frame, never once dreaming that, not only were they not of the same race, but, even more, they belonged to quite a distinct species.

Whatever may be the result of any attempt to cultivate the honey-producing bees native to East India, I still feel sure that, in the hands of a bee-master of sufficient experience and knowledge of principles to enable him to adapt himself, or rather his management, to circumstances, any of the races of the species of "Apis mellifica" can be made to thrive in India. I am certain that those colonies of "Apis mellifica" which I took to Ceylon thrived very well indeed during the time that I had them under my observation.

I look forward to the time when bee-culture in India will be a source of no inconsiderable revenue; in fact, I fear the time will yet come when American bee-keepers will find that their tons of delicious nectar will have to compete in the English market with tons of sweets gathered on "India's coral strand."

A vote of thanks was passed to Mr. Benton for his very interesting essay.

A short discussion ensued on the "pollen theory" which received no endorsement; the speakers being Rev. L. Johnson, Dr. Jesse Oren, C. P. Dadant, C. F. Muth and others.

The use of wide frames for side-storing was also discussed by Mr. Viallon, Mr. Wallace, Mr. Muth, and Mr. L. Johnson, all thinking that that method was getting to be "a thing of the past."

Adjourned to 3 p. m.

At 3 p. m. President Brown called the meeting to order, and Mr. Hart, of Florida, read his essay on

PRODUCING, CURING AND PREPARING HONEY FOR MARKET.

To the producer of extracted honey, quantity and quality are questions of vital interest, and any information tending to increase the former or improve the latter is joyfully received. I can hardly hope to add anything new to either of these questions, but as much of what has been written in regard to them has not yet been accepted by all as facts, I may be able to help to decide some of the as yet doubtful points.

In considering the question of quantity, the process that will give the greatest number of pounds of honey from a given number of colonies, and do it with the least expenditure of labor and money, seems to be the one sought for. Perhaps I can best convey my opinions upon these matters by giving the methods which I would follow were I to take an apiary and work it for one year with the view of getting all the extracted honey from it that I could. While doing this I wish it to be remembered that I speak for my own locality, yet there are many principles that will apply equally to it and to all others.

The honey-flow commences early in January, and is usually checked by dry weather late in March. It commences again early in May, and continues until about Aug. 10; from then until Sept. 15 no honey is gathered, as a rule. After the latter date a light flow commences, and continues, some years, until the last of November, and when there is a large crop of palmetto berries, a month later. Swarming commences from the middle of January to the middle of March, and continues until May, if not interrupted by the drouth in April. I would have all my bees in 10-frame Langstroth hives with one story, as soon as the honey-flow and weather would warrant. I would occasionally spread the brood and insert an empty comb in the middle of the brood-nest. I would encourage the colonies to

cast two natural swarms each, and the first swarm to cast one, making my increase from one to four. As soon as the honey-flow begins to slacken in March or April, I would feed lightly every evening after sundown. This light feeding keeps the queens laying and the colonies in fine condition to take hold of the summer honey-flow. As soon as honey begins to come in freely in May, I would put on the top sections, and in each hive I would put one frame of uncapped brood, and the rest of the frame filled with empty combs or foundation, watch them for a day or two and see that they commence storing there.

As soon as the combs were one-third capped, I should go around with my comb boxes and take up nearly all and put empty combs where full ones had been removed. This I should continue to do so long as the flow lasted, making the rounds as often as I could do so and find the honey from one-third to one-half capped. By the middle of July I would begin to look for efforts to swarm again and take measures to prevent it. I should be particular not to extract so as to leave less than 20 pounds of honey in the hives at the close of this flow. If it continued longer than I expected, and there was more honey in the hive when the close of the flow came, I would take up the surplus, working under a bee-tent the while to prevent robbing. If, during the fall and early winter honey-flow, the hives were filled, I would take out a part to give room for more, but only enough for that.

If I now had nearly as many bees as I wanted, I would leave all the top sections on for the next season.

As I said before, I would take up my honey and extract it as soon as it is from one-third to one-half capped, and I would then cure it by placing it in tanks in the sun, or by running it through an evaporator under glass, on bright, sunny days, and then barrel and bung it up tight. For home trade I consider small packages, such as honey-bottles or the tin pails now so much used, the best; but for sending long distances there is nothing better than a good, 40-gallon cypress barrel well waxed inside.

Mr. Wallace (Ont.) asked what Mr. Hart used for waxing honey-barrels.

Mr. Hart replied that he used paraffine because of its cheapness. He extracts the honey before it is capped, and then cures it by evaporation.

Mr. Muth cures his honey by evaporation, lets it stand and granulate solidly; then it is good, and keeps well.

Mr. Flournoy did not like hard-wood barrels. Cypress kegs are best and need no waxing.

Mr. Viallon extracts the honey when it is about ⅓ capped, lets it settle for 12 hours and then draws it off from the bottom, leaving about a barrel in his tank. He found Cypress barrels better than hard-wood ones; they do not leak and need no waxing.

Mr. Grinsell (Mo.) used oak barrels and had no loss of honey; they were alcohol barrels, and were iron bound.

Mr. Viallon said that the cypress barrels should be made up a year before needed, and then re-coopered. Honey will go through barrels that would hold molasses.

Thos. G. Newman was then called upon for a speech upon

THE TRANSPORTATION OF HONEY.

Mr. President Ladies and Gentlemen:

Before discussing the theme assigned to me, allow me to remark that the present occasion presents much food for thought. The magnitude and splendor of the World's Exposition (the existence of which has brought this congress together) deserves more than a passing remark; still, in our thirst for apicultural knowledge and the exchange of views on that ever-advancing pursuit, we can digress but a moment to remark that its wonderful "exhibition" of the progress and improvement of the present *inventive* age is astounding.

Among the industries of this great continent, that of honey-production is by no means the least. From the United States, Canada, Cuba, Mexico and Brazil, enough "concentrated sweetness" is annually gathered to make an industry of very respectable proportions.

The honey crop of America for the present year is estimated to be worth about sixty millions of dollars, (⅓ of it being in the comb and ⅔ extracted). The wax product amounts to over one million of dollars.

These figures give a grand idea of the dignity of our mission, the magnitude of the work before us, and the exalted possibilities that inspire us to fresh zeal and grander achievement. Behold! how invention and art and science have followed our pursuit in all its progressive steps!

This grand amount of comb honey must be produced in such a manner that it may be placed upon the markets of the world in the most attractive form; stored in strong combs, safely guarded by neat but attractive bands of wood, and these again should be placed in glassed crates which will show the honey, to attract the attention of the lovers of the beautiful and captivate the eye of those who relish the deliciousness of the God-given sweetness.

The apiarist should give his personal attention to its crating, grading and shipping, so that he may be positive as to the details, should any question, involving these, be raised by the consignee. The inexperienced and careless ones are always a detriment and sometimes ruin the market, for their more careful and experienced neighbors. They take an inferior grade of honey, put up in irregular and soiled packages, to market early, just to get a little money, and sell for any price offered; and this often settles the price for that locality and season, and the attractive honey is either sacrificed to their carelessness, or shipped to another market. If shipped away to market it must not be packed in straw or chaff; but put in small crates containing a single tier and placed with the top-bar downward, which is the strongest way, and will prevent much breaking down. Ship by freight for the expressage will be so high that it will take off all the profits, and is, in nearly all cases, liable to as much damage as when sent by freight. See to its packing in the car, wagon or vehicle, and place the combs lengthwise to the engine but crosswise to the horses, and give direction not to have it unloaded on trucks, but invariably to be unloaded by hand.

Honey when it is extracted from the combs, should be thoroughly ripened and placed in receptacles to suit the market for which it is intended. Some confectioners, and others who use honey extensively, may be satisfied with large casks (clean and sweet), but the majority who buy it at wholesale prefer it put up in kegs holding from 50 to 200 pounds. The retailer will need it put up in pails, jars, cans or tumblers of various sizes and shapes to suit the fancy of consumers. When thus put up, it is good for years.

To transport honey from the apiary to the "centres of commerce" with perfect safety, and at the same time inexpensively, should be the aim of all honey-producers, but there are many difficulties in the way. Railroad companies have heretofore erred greatly in the classification of "bees" and "honey." They have classed *hives of bees* at double first-class rates, which is very unjust—making the charges equal to those for sending by express. Then, by the mistaken use of the word "hive" for *colony*—empty hives, by many railroads, have heretofore been classed the same as those containing bees, greatly to the detriment of those who buy hives from manufacturers. They should go as "empty boxes," at about one-eighth of the cost now demanded for freight by some railroads.

In one tariff to which our attention has just been called, "bees in hives" are 4th class; but while bee-hives in car-load lots are 6th class, single "bee-hives" are double first-class, and prepayment of charges demanded! The utter foolishness of such can only be explained by the fact that the one who arranged it, knew nothing about bee-keeping! Bee-hives (*i. e.* empty boxes) are charged double first class (say $2.00), while "bees in hives" go for 60 *cents!* from New York to Chicago. Let me request this Congress to take the matter in hand, appoint a committee to wait upon the next meeting of the Transportation Agents, and endeavor to have these "ratings" revised—thoroughly and rationally.

In the matter of shipping honey to market—the classification is so high that it amounts to almost a robbery—and to seek relief, some bee-keepers ship extracted honey as "syrup," at less than half the rates demanded for honey. Tariffs ought to be revised, and liquid honey should be rated the same as syrup.

Those bee-keepers who have a desire to be exactly right, and feel delicate about the matter of shipping honey as syrup, are, therefore, compelled to pay double the amount which their less scrupulous neighbors have to pay for freight to the large marts of the world. Some grades of syrup sell as high as honey, and there is no reason why both should not be graded alike, when one is as easily and cheaply handled as the other.

Having taken the initiative, to have this matter remedied, we have felt it to be our duty to follow the matter up by using our influence on the railroads to have the matter satisfactorily adjusted, and as a result, we now have *new* classifications on the through

lines east, of which we will give the following as a sample, dated Jan. 1, 1885:

"Bees in hives—4th class.
Bee-hives (knocked down) 3rd class.
Bee-comb, boxed, 3rd class.
Honey in glass, 1st class.
Honey in barrels or casks, 3rd class.

In order to make this classification understood, we will enumerate the rates between Chicago and New York: "First class $1; second class, 85c.; third class, 70c.; fourth class, 60c., per 100 pounds."

This classification will no doubt be followed by other railroads as soon as their attention is called to it, and, before another year dawns on the world, we hope that there will be much less cause for complaint by bee-keepers concerning the freight classification of bees, hives, honey, etc.

Jas. D. Meador (Iowa) said every bee-keeper should endeavor to have this matter adjusted to the satisfaction of all the bee-keepers of America.

After some discussion it was voted to appoint a committee to present resolutions setting forth the views of this Congress, and to wait upon the meeting of commissioners of the freight lines, to be held at Atlanta, Ga., very soon. The President appointed the committee as follows: S. C. Boylston, South Carolina; Jas. L. Meador, Missouri; and L. E. St. John, New York.

An essay from Mr. O. O. Poppleton, of Iowa, was read upon

PASTURAGE FOR BEES.

In considering this subject, four questions naturally arise: 1. Is it desirable to have more pasturage for our bees than nature gives us without special effort on our part? 2. Is it possible to increase the growth of honey-yielding plants by efforts of our own? 3. Can we obtain sufficient results from such efforts, to pay us for the labor and money expended? 4. What are the particular plants, if any, that it will pay to raise for honey. As the first two questions will undoubtedly be answered in the affirmative by all, they, therefore, need no discussion.

When in this essay I speak of artificial pasturage, I mean all those honey yielding plants not usually found growing without having been especially planted for that purpose. In considering this matter of artificial pasturage, the first thing to do, is to take into account the probable amount of such pasturage necessary for effectiveness, and I know of no other way to do this than to examine the extent of our natural resources. I have observed the bees from my apiary, consisting usually of between 100 and 200 colonies, being nearly or quite as numerous on white clover five miles from home as they were in the immediate vicinity of the apiary, thus showing that the bees glean from an extent of country with a diameter of at least ten miles, or about 50,000 acres, in round numbers. This is of course not all covered with clover, but as at least one-tenth of it is so covered, leaves as a very low estimate, the equivalent of some 5000 acres completely covered with white clover. I sometimes obtain 10,000 pounds of surplus white clover honey, or an average yield of 2 pounds per acre. The total yield per acre that might be obtained with just the right number of bees for the capacity of the field, is, of course, very uncertain, but I doubt whether over one dollar's worth of honey could be obtained from each acre, under the most favorable circumstances, without counting cost of apiary labor, etc., in obtaining that amount, or allowing for a reduced yield when circumstances are unfavorable. Again, there are certainly not less than 5,000 basswood trees within reach of my bees, and the largest crop of basswood honey I have ever obtained in one season was 4,000 pounds, or less than one pound per tree.

Of course these calculations are necessarily very crude ones, but they show unmistakably that this subject of artificial pasturage is not one of an acre, or a few acres, but one involving large areas of land, and entirely forbids the use of high-priced, valuable land for this purpose. Again, plants that require cultivation must be discarded from our calculations, as any one can readily see by calculating the expense of caring for, say 80 acres, when planted to any of our most-easily cared-for crops. Neither do I think it can be made profitable to raise any plant for honey alone, that requires to be re-seeded each year.

From the foregoing we would deduce the following rules or principles that must be observed if we would ever succeed in profitably raising plants for honey only, viz:

1. Plants must be grown on large areas of ground, not simply on small patches.

2. Either barren or very low priced land must be used, as the results will not pay the rental of valuable farm land for this purpose.

3. Plants must be selected that will re-seed themselves year after year.

4. They must also be plants that will retain possession of the ground on which they are grown, to the almost entire exclusion of other vegetation year after year without annual cultivation.

5. Plants used for this purpose should not be very troublesome weeds, especially if liable to spread on neighboring farms.

Now comes the practical question. Have we any plant or plants that possess the proper qualities? Each one will have to answer this question for his own locality, but for mine, I am very unwillingly forced to answer, no. I have tried several, especially figwort and sweet clover, and they are both signal failures in those qualities described in rule 4.

While I have been very reluctantly forced to the conclusion that it is not practicable to raise plants or trees on a large enough scale to materially increase our crops of honey, I think it probable that we can increase the growth of figwort, sweet clover, etc., in waste places in our neighborhoods, enough to keep the bees at least partly employed during what would otherwise be seasons of almost absolute dearth of honey-producing plants. No experienced bee-keeper needs to be told the advantages of this, even if little or no surplus honey should be gathered at these times. We now come to the consideration of a different class of plants, viz: those that are valuable for purposes other than the honey they produce, such as alsike clover, buckwheat, etc.

I would place buckwheat at the head of this class for value, it being one of our best paying crops for its grain, wherever it can be successfully grown, and whatever honey it yields is so much clear gain, but unfortunately its yield of honey is very uncertain. A few years ago I reported at one of our conventions, that I had obtained about 6,000 pounds of honey from some 25 acres of buckwheat. As I only estimated the area of the crop grown within 2½ miles of my place, and later observations have convinced me that bees profitably gather from a much greater distance than that, therefore, the number of acres from which the crop was gathered was greater than I stated. This was the largest amount of buckwheat honey I have every obtained in one season, while the smallest has been some less than 2,000 pounds with at least 100 acres of buckwheat within three miles of me.

It is a mistake that this plant can be sown so as to make a succession of honey crops. No matter how fully it may be in bloom, it usually commences to yield honey about Aug. 10 or 15, the earliest and latest it has ever commenced to yield with me, having been the 5th and 20th of that month respectively. Prof. Cook reports having once seen it yielding honey much earlier in the season, but this single instance makes no rule. Alsike clover also yields honey largely, but its coming at the same time white clover does, lessens its value materially. Its high crop-value, however, for either hay or seed, makes it one of our most profitable honey-plants. I have tested mowing it when first commencing to bloom, so as to retard its full blooming until after white clover, with partial success; but I find the following drawbacks to a full success: Too large an area has to be handled to afford a material help, and a partial or entire failure, if the weather should be very dry. I have, therefore, abandoned this plan after experimenting with it two seasons.

To conclude, I cannot say that I have much faith in our being able to materially increase our honey resources, except by such means as scattering seeds of honey-plants in waste places in our neighborhoods, by inducing our neighbor farmers to raise some or all of the honey-producing crops, and by selecting those kinds that produce honey, whenever we set out shade trees on our premises.

Some remarks were made upon the advisability of providing bee-pasturage, by A. I. Root (Ohio), J. D. Meador (Iowa), Paul L. Viallon (Louisana), J. A. Green (Illinois), Dr. Blanton (Mississippi), and others—all agreeing that it was very desirable to obtain something for the bees to work upon, during the regular "gap between the honey-flows," which occurs in mid-summer.

Paul L. Viallon (La.) then read the following address, giving his views upon the

AMOUNT OF HONEY CONSUMED BY BEES TO MAKE ONE POUND OF BEESWAX.

I doubt whether this question will ever receive an accurate answer, as it is a rather difficult problem to solve correctly; but by experiments I have found that it requires a great deal less than it was formerly believed. It will probably be remembered that I read an essay at the North American Bee-Keepers' Convention held at Cincinnati in October, 1882, in which I gave my experiments on this subject, with bees in confinement. I then stated that I thought that it would require less honey to produce one pound of wax when the bees were at liberty and gathering nectar, basing my ideas on the difference between cane-sugar and honey as wax-producing elements, as I found that bees will secrete more wax with sugar than with honey.

If we compare the analysis of nectar with that of honey, we see that though the saccharine matters of nectar are composed mostly of cane-sugar, and show no trace of glucose, we find honey to contain from 40 to 45 per cent. of glucose and no cane-sugar, or at least very little. Now, as bees will make more wax with cane-sugar than with honey, why should not nectar, mostly composed of cane-sugar, when gathered by the bees and used by them before it has undergone its general transformation into honey by the action of the acid incorporated into it, produce

more wax than ripe honey with which we have made our experiments? This question is what led me to make the following experiments, and although not minutely correct, they are, I think, sufficient proofs to show that it does not require 20 pounds of honey to produce one pound of wax, as asserted in some of our latest works on apiculture.

During a flow of honey (nectar), I took a full frame from each of several colonies, apparently of the same strength and condition, and inserted empty ones in their places. I picked out 4 of these colonies which had built the same amount of comb in the same length of time in the empty frames which were inserted. I then took all their combs away, and to each of two of them I gave 10 frames of empty combs, and to each of the other two 10 empty frames; at the end of 28 days I had extracted from the two having the combs, 57 pounds and 4 ounces and 62 pounds and 3 ounces, or an average of 59 pounds and 11 ounces; from the two having empty frames, I extracted 29 pounds and 4 ounces and 32 pounds and 8 ounces, or an average of 30 pounds and 14 ounces. After melting the combs of the last two colonies, I obtained 7 pounds and 14 ounces of wax, or an average of 3 pounds and 15 ounces, showing that there was a little over 7 1-3 pounds of honey consumed for each pound of wax made by the bees. In a former experiment of the same kind, 8 pounds of honey was consumed.

Dr. Blanton stated that his method of purifying wax was by boiling it in pure, clean rain water three or four times, straining it through a cheese cloth, letting it cool slowly, and then running it off into moulds.

The Congress then adjourned till 10 a. m. on Thursday.

THIRD DAY.

President Brown called the Congress to order at 10 a. m., and called for the report of the Committee on Transportation, which was as follows:

The Committee, to which was referred the matter of freight charges on apiarian supplies and products, beg leave to report that they are unanimously of the opinion that the excessive charges now exacted by the transportation lines, arise, not so much from the desire to exact these amounts, as from the fact that few classifications include the supplies of bee-keepers under their proper nomenclature, which are frequently incorrectly charged, and at different times different charges are made upon the same article. Also, that these charges are exacted through ignorance of the real value, and also of the risk incurred in transportation.

We, therefore, beg leave to offer the following resolutions for your consideration:

RESOLVED, First, That the charges now made on our products and apiarian implements by the transportation lines of the country are in many cases excessive, and the articles themselves are not properly classified when compared with other agricultural supplies of equal value, weight and compactness.

RESOLVED, Second, That the charges on our honey products when put up in like packages, should not be more than that of syrup—the weight of honey to the cubic foot being nearly 20 per cent. more, and frequently of not more marketable value.

RESOLVED, Third, That all bee-organizations be advised to approach the transportation lines in their vicinity, and endeavor to obtain a uniform classification by explaining the nature, weight, value and risk incurred in transportation of the articles necessary to our business.

The report was received and the Committee discharged. It was then unanimously adopted.

The following from Prof. A. J. Cook, Agricultural College, Mich., was then read by Mr. Hart:

FECUNDATION OF QUEENS.

The subject assigned to me by the Committee, is the somewhat startling theory recently stated and defended by some of the writers on apiculture, "That the liquid juices of the drone-brood may be successfully and exclusively used to impregnate a queen."

Any theory in natural history which cuts athwart the conclusions settled by the long, arduous experimental research of the scientists of the world, should be considered as resting on a false basis, either of experiment or observation, until tried over and over again under the most crucial tests, and the most thorough and exhaustive experiments.

Scientific men in all the civilized nations of the world have agreed, after the most wide-searching and profound study and experiment, that there are only three methods of reproduction among animals:

First, we have fission, or mere separation. One animal divides and becomes two animals, each as perfect as the parent. This method prevails among the protozoa—nearly all of which are microscopic—the the sponges and the polyps. Thus it is confined to the very lowest of animals. In this reproduction by fission there are reasons to believe that, in some cases at least, the separation is preceded by the reception into one animal of the entire substance of another animal of the same species. This might seem to lend support to the theory under discussion; except that it is only observed among the animalculæ—the lowest of the animal creation, where the whole body substance is wholly, and only, undifferentiated protoplasm. To use it in support of the theory in question would be a far-fetched argument.

The second method of reproduction is that of gemmation or budding. This reminds us of the budding among plants. A bud-like process develops from the animal, which finally drops off, and with perfection of growth becomes another animal exactly like its parent. This kind of reproduction is met in the protozoa, the polyps, and in some of the worms. Like fission, it is a low form of increase, though higher than fission, and, as we see, is confined to the lower animals.

The third kind of reproduction is sexual reproduction. This is seen in sponges and all higher groups, often existing side by side with the other and lower methods of reproduction.

In all sexual reproduction, eggs bud out from organs called ovaries. These eggs are cells, and in a few cases are capable of development under favorable conditions without the stimulative aid of any other cell. Usually sperm-cells must bud forth from other organs—the testes—and become incorporated in the cell substance of the eggs, before the latter may become potent to develop and so reproduce the species. Sometimes the eggs and sperm-cells are produced in the same animal. Such animals are called hermaphrodites. Hermaphrodites may be studied in animals as high as earth-worms and snails.

The development of eggs without impregnation, which can be conclusively proved by any one who will take the trouble, is so exceptional in sexual generation, that we need not wonder that it was doubted at first, when announced as true. We now know that in plant-lice, bark-lice, and in the males of ants, bees and wasps, this is the method of development. Any person with but slight pains and scientific ability, can demonstrate it. The fact that those unicellular animals—the protozoa—which, like the egg, are but cells, reproduce usually without the vivifying influence of other cells, makes this parthenogenesis among high animals, like bees, not so strange. That some of the protozoa unite their body substance prior to generation, makes us understand more easily why bi-sexual generation is the most common method among the higher animals.

Now we see that in all this there is not an atom of support for the new proposition. Of course there are organized cells in the liquid juices of drone-larvæ—as there are in our own lymph and blood; but these are not reproductive corpuscles or cells, and to believe them capable to fructify the germ-cells or eggs, would be absurd, as such use would be unnatural and foreign to their real function.

We all know how small drones often are, and how easily they may be concealed from the most vigilant search; some of us are certain from our own experiments that rarely—very rarely I think—queens are fecundated in confinement, or in the hive. How then do these advocates of this new and very exceptional theory, know but some such drone, met their queens in the hive. The whole matter is so complicated that to say the impregnation can only be accounted for as the result of this very artificial inoculation, is most rash. Any such theory should be tried over and over before it is pushed forward to the dignified position of a scientific theory. In a case so complicated as the one before us, where it is so difficult to prove that the fecundation has not been entirely natural, all the pains and all the more experimentation is called for. Many of us need to learn that hasty generalization is the bane of any art or science.

The essay was considered quite conclusive, and no one made any criticisms.

The following essay by Mr. Charles Dadant, was then read by the Secretary, on

COMB FOUNDATION—ITS HISTORY AND USE.

Although the invention of comb foundation is of late date, the need of human ingenuity to aid the bees was recognized long ago by scientific bee-keepers. There are three points to be gained by the use of comb foundation, viz:

1. A saving of time, honey and labor to the bees. Beeswax was found, by repeated experiments, to cost the bees not less than 15 pounds of honey for every pound of comb built. These experiments proved conclusively that the actual value to the bees, of beeswax, if it could be returned to them in the shape of combs, was far in advance of the commercial value of this article. Even at the low price of 6 cents per pound for honey, the relative value of comb foundation is demonstrated to be not less than 90 cents per pound.

2. Another object to be gained by the use of foundation is the destruction of drone-comb by replacing it with worker-comb. Very few among our most practical bee-keepers place enough importance upon this item. We see thoughtful bee-keepers seriously discussing the pro and con of a drone-trap when they could just as well do away with nearly every drone, radically, by removing drone-comb. Of course it is impossible to remove every drone-cell from any hive, but a few square inches of drone-brood will never cause the annoyance which is sustained by the existence of whole sheets of drone-combs in the breeding apartment of nearly every hive. Is it necessary to remind bee-men that 32 drones require as much room, as much care, and as much feed as 50 workers? Is it necessary to tell them that a sheet of drone-comb can be removed from a hive in early spring and be replaced by a sheet of worker-comb or worker foundation in less than 5 minutes?

3. The other advantage to be derived from the use of comb foundation is securing straight combs in the frames. This is the main requisite for success with movable-frame hives. With crooked combs, a movable-frame hive becomes worse than an ordinary box-hive, for it does not allow of any manipulations necessary in practical bee-keeping.

All these advantages were long ago recognized by our predecessors and leaders in the study of bee-keeping. Samuel Wagner, formerly editor of the BEE JOURNAL, was the first in America who tried to make comb foundation; but his attempts failed. Mehring, in Germany, made the first successful efforts in 1857; but his sheets of foundation were badly printed, and were not always accepted by the bees. P. Jacob, of Switzerland, improved on this invention and manufactured a press which made much better work; but the great objection to a press is that it cannot make uniform work unless the wax sheets are absolutely perfect.

In 1875 the first practical work was done. Mr. A. I. Root, with the help of a good machinist, made the first roller mill, and since that time it has been improved upon until the use of comb foundation has become as widely spread as the introduction of the Italian bee. Hundreds of machines have been sold, and the American foundation machines are used as well in the old world as in the new. I have exported machines of the Washburn, Dunham and Vandervort make, into France, Italy, Switzerland, Austria, etc.

The sale of foundation has taken unlooked-for proportions in this country, and this shows once more the practical matter-of-fact spirit of Americans, so prompt in accepting undeniable progress, especially in industrial spheres.

I have been requested to give my opinion of the machines now in use. It would hardly be fair to speak in favor of any one publicly. I can, however, state what are the main requisites of good foundation both for brood and for comb honey. This statement is not only the expression of my views, but also that of the majority of bee-keepers.

All comb foundation should look as nearly like the natural base of comb as possible. All unnatural shapes are objected to by bees and bee-keepers.

Foundation for brood-combs requires a thin, uniform base, and heavy, well printed walls. There should be enough wax in the walls of it to make nearly the whole of the comb when drawn out by the bees. The greater or less pressure to which the wax is subjected has absolutely nothing to do with its manipulation by the bees; its greater or less compactness or firmness being altogether dependent on the manner in which it is melted, for use.

Foundation for comb honey requires an exceedingly thin and uniform base—as thin as that of natural comb, and a very light cell-wall. It should be remembered that this is extremely important to do away with the fish-bone in the comb honey, even when using it in full sheets in the sections. The successful manufacturing of such foundation, about 10 to 12 square feet to the pound, is one of the improvements of the last few years, and is no longer a doubtful question.

Mr. Muth said that Mr. Dadant's essay was so complete that it needed no discussion. He endorsed every word of it.

By request the subject of "Robbing" was discussed.

Mr. Wallace and Dr. Jesse Oren advised the use of coal oil; but Mr. Viallon said that neither coal oil nor turpentine would prevent the bees robbing.

Mr. Dadant said we should not allow robbing to commence, by keeping the apiary free from exposed honey.

Mr. Hart stated that he had always been able to stop robbing by the use of wet cloths and spray. He described a case in which several of his hives containing colonies were smashed during a gale, by pine trees falling upon them. He was away for 3 days thereafter, and upon his return he found a case of robbing, of the worst kind, which he succeeded in subduing by contracting the entrances of the hives with wet cloths so that but one bee could pass at a time, each having to crawl over a part of the wet cloth. He also used a fountain-pump for spraying the bees that were still in the air. Mr. Hart believes that water rightly used will answer all purposes.

As it was proposed to have the members of the Congress photographed in a group, the Congress adjourned till 3 p. m., and repaired to the Horticultural Hall and sat for the photographs, about 50 of which were ordered by those present.

At 3 p. m. President Brown called the Congress to order, and an essay was read from Prof. Hasbrouck, Bound Brook, N. J., on

CHESHIRE'S TREATMENT OF FOUL BROOD.

I think that it will not be disputed that the investigations and discoveries of Mr. Frank Cheshire are the most important discoveries to bee-keepers which have been made in a generation, and one of the most remarkable achievements of scientific investigation on record. When similarly intelligent, thorough, and successful work shall be put upon the life-history of the germs which undoubtedly produce many of the most terrible of human diseases, the specific modes of destroying them will soon be developed, and such scourges as Asiatic cholera, diphtheria, yellow fever, and small-pox, will soon lose their terrors to our race. Moreover, these investigations of Mr. Cheshire will make it more easy for himself, or other observers, to find out the mysteries of other related organisms destructive to man and the higher animals.

I have nothing to offer in verification of Mr. C.'s observations, or in demonstration of the efficacy of his method of treatment, but I promise myself the pleasure, another season, of trying to see what he has seen, and to give his cure a thorough test, for which material has been promised me. In the meantime, although I am not so constituted as to appreciate highly "internal evidence," yet I can very easily see in the reports of these investigations "internal evidence" enough to be overwhelmingly convinced of the genuineness of the discoveries, and of the absolute certainty of his method of cure. Can it be possible that a man of such well trained powers of observation was deceived in the thoroughness and permanency of the numerous cures which he has reported with such minute detail, and with such conscientious faithfulness? His cures have been sufficiently numerous to prove conclusively, if they are admitted to be genuine, that the remedy is absolutely unfailing. Can anybody believe that a man of his character would invent all these tales of investigation and experiment for a newspaper sensation, as that ape, Wiley, did his story, for a "scientific pleasantry?"

Some may say that talk on this subject would be more in order after we had all proved Mr. Cheshire's conclusions accurate, but I fear that many whose bees are afflicted with this terrible pest, are in danger of being influenced by croakers to put off indefinitely the energetic trial of the remedy, which I am persuaded will free them from their troubles very early in the next season. I suppose there always will be croakers. Some one once said to President ——, "Do you know that Charles —— doesn't believe the bible?" "Very likely," said the President, "He didn't make it." Much skepticism on matters in general is inspired by a similar spirit. Whenever anything new and useful is discovered, there are always those who, without any consideration, are ready with an "I don't believe it." Sometimes they attempt to verify conclusions or to follow processes, with a disposition to be a little better pleased to fail than to succeed, so that they can demonstrate their foresight, and have the satisfaction of saying, "I told you so," "all a fraud," "another humbug."

Now, quite as should have been expected, several parties both in England and America, have already come forward, declaring that they have tried the phenol cure, after Mr. Cheshire's directions, of course, and they did not succeed. Now, put the statements of these men, over against Mr. Cheshire's, that he has cured numerous colonies, and without a failure, and which deserves the greater credence? What do these reported failures prove? To me, conclusively, that the treatment has been carelessly or awkwardly applied, and probably with some improvements suggested by the wisdom of the operator.

What is the proper course to take for those having foul brood in their apiaries? Go slow, as advised by some of the bee-papers, and potter along with the old treatments till the season is past, with much trouble and loss and uncertainty about the result? This would remind me of the story of the philosopher who spent much time in filtering the water from the brook near his cabin, when, if he had gone up-stream a little way, with a little trouble, he could have fenced out from the spring the hogs whose wallowing made the water muddy.

My advice to all having a trace of foul brood in their apiaries, is to disregard croakers and get to work at it by the Cheshire method as early in the spring as possible, and to keep at it in earnest till the thing is cleaned out. If you seem to fail in any case, conclude that it is from some oversight of yours, and try it over until you get everything as it should be, when I am confident you will succeed.

I am a little afraid that the uncertainty manifested as to exactly what is meant by absolute phenol, which is the remedy recommended, may lead to some trouble. Phenol has been called pure carbolic acid; so it is according to Fown's, and that is authority. One explains it this way: The drug is called phenol in England, carbolic acid in this country. That is not exactly the way I understand it. What is found in crystals in the drug trade in America and in England, too, I think, and called carbolic acid, is not "pure" carbolic acid—not phenol. Mr. Cheshire says, as I understand it, that this will "not" do. Absolute phenol can be obtained in this country, I think, only at laboratory supply dealers in the large cities. But if there is a demand for it, the druggists will soon have it, and reliable parties will undoubtedly advertise to furnish it by mail or express, on reasonable terms.

Mr. A. I. Root, of Medina, O., gave a lengthy address on "The rise and progress of apiculture in America," mentioning many interesting incidents in the history of the past 25 years, which he was requested to write and publish in full.

Mrs. Harrison mentioned an additional historical fact that Mr. God-

frey, of Red Oak, Iowa, a mail agent as well as a bee-keeper, suggested the way to obtain a reversal of the decision of the Postmaster General, and to admit of queens being sent by mail.

T. G. Newman remarked that this occurred when he was President of the National Society, and it took a united effort to get the matter through. Prof. Cook obtained the assistance of several officers of the general Government, and by a personal application to the P. M. General, got the thing through.

Mr. Root exhibited and described a simplicity wired frame, made to *reverse*.

Rev. L. Johnson made an eloquent speech in favor of bee-keeping as a pursuit for women and disabled soldiers, etc.

Mrs. L. Harrison said that she knew that women could keep bees, but she did not know that "ladies" would do so.

Mr. Muth remarked that adulterated honey was doing us much harm, and lessened the prices which we can procure.

Mr. Viallon made some remarks concerning the composition of honey.

The committee on resolutions reported the following, which were adopted:

RESOLVED, That we, the members of this Congress, discountenance in every way the adulteration of honey, and pledge ourselves hereafter, as heretofore, to sustain the honest bee-keeper in producing his genuine, unadulterated product; and especially to condemn all the work of adulterators as injuring both the public and bee-keepers generally.

RESOLVED, That it is the opinion of this Congress that the Italians are superior to the brown or native races of bees.

RESOLVED, That this Congress hereby tender its thanks to the managers of the World's Centennial Cotton Exposition for the many courtesies extended to it during its sessions in this city.

The following essays were read and placed on file, to be published as opportunity may be found:

"Bee-Keeping as a Pursuit," by Arthur Tood, of Pennsylvania.
"The Apiary," by J. E. Pleasants, of California.
"Can a Locality be Overstocked?" by John Y. Detwiler, of Florida.
"Honey Resources of Napa County, Cal," by J. D. Enas, of California.
"Honey Production of Tennessee," by W. P. Henderson, of Tennessee.
"Honey Resources of Virginia," by J. W. Porter, of Virginia.
"Honey Products of North Carolina," by A. L. Swinson, of North Carolina.

Farewell addresses were made by T. G. Newman, S. C. Boylston, Rev. L. Johnson, Paul L. Viallon, C. F. Muth, A. I. Root, R. Grinsell, etc.

The Congress then adjourned *sine die*.

THOMAS G. NEWMAN, *Sec.*
J. P. H. BROWN, *Pres.*

☞ The Sixth semi-annual meeting of the Western Bee-keepers' Association will be held in Unity Chapel, at St. Joseph, Mo., on Felix St., between 7th and 8th streets, on Thursday and Friday, April 9 and 10, 1885, commencing at 10 a. m. on April 9. All interested in bee-culture are invited to attend and make the meeting as interesting as possible. A full programme will be prepared and a general good time may be expected.

C. M. CRANDALL, *Sec.*

SELECTIONS FROM OUR LETTER BOX

Bees Doing Well.—Daniel Brothers, Sarahsville, ☌ Ohio, on Feb. 25, 1885, says:

We have had cold weather all through the month of February, the mercury reaching 10° below zero. The bees on the summer stands are apparently doing well, so far, where they have plenty of good honey stores. I have 20 colonies of Italians, blacks, and hybrids that, so far as I can tell, are doing well.

Bees Affected with Diarrhea.—I. N. Bayles, (33—55), Urbanna, ☌ Iowa, on Feb. 23, 1885, says:

A few years ago I bought 4 colonies of bees and increased them to 7 colonies. I left them on the summer stands, and lost all of them. I thought that where a man lost his money, there was the place to look for it; and so I bought again, and started in the spring of 1884 with 33 colonies, increased them to 55 and sold $132 worth of honey, being an average of $4 per colony. Last winter I lost 17 colonies out of 48, and I think my loss will be as great this winter. My bees have the diarrhea now, and many of them are in bad condition. They have not had a flight since Dec. 1, and I think that it will be 3 weeks before they can have another, as the snow is very deep yet. I think that this has been the coldest winter that I have ever seen. I am taking the assessment of our township, and the census also, and when I get through I will report the number of colonies of bees in this township, and their products.

Report, etc.—C. W. Young, Stratford, Ont., on Feb. 23, writes as follows:

The months of January and February have been the coldest known for years in Ontario, and probably in the Northern States, also. The mercury has been below zero on all except 2 or 3 days, and has marked as low as 23° or 25° on several occasions. Reasoning from the last cold winter—1881, I believe—there should be a decimation of bees. I have about 20 colonies, all outside; a few are in chaff hives, the rest in single-walled hives, around which a shed of rough boards was built, with 3 or 4 inches of shavings packed around them. A second story was put on and half filled with shavings, and the cover on top. I examined several colonies, to-day, and found no dead ones, so far. It may interest bee-keepers who are printers as well, to know that honey is a good substitute for glycerine in making rollers. I made a set of rollers recently, using equal weights of white glue and late fall honey—hardly fit for table use—aud the result was very satisfactory; in fact they are the best rollers that I have made for years. The honey is worth probably 6 or 8 cents a pound, and glycerine costs 30 or 40 cents per lb.

Queen-Excluders.—Dr. G. L. Tinker, New Philadelphia, ☌ O., writes:

On page 101, and in the third column of my article I am made to say that "I also advise the use of queen-excluders on all colonies," etc. Upon all new colonies or swarms I certainly do, where few brood-combs are allowed; but upon colonies having ten or more brood-frames they are not at all necessary; yet if they were so used, it is certain that they are no hindrance to the work of the bees in supers.

Destroying Ants.—Wm. McKenzie, Eden, Ont., requests thus:

I would like some remedy for destroying ants. In the Weekly BEE JOURNAL for 1884, I read of one bee-keeper who poisoned them, but he did not state what kind of poison he used, nor how he prepared it.

[Sprinkle salt wherever the ants are found, and they will soon cease to be troublesome.—ED.]

Bee-Hive Factory Burned.—Paul L. Viallon, Bayou Goula, ♀ La., on March 2, 1885, writes as follows:

After my pleasant meeting with the many bee-keepers in New Orleans, I returned home on Saturday morning, and the same night at 11 p. m. my bee-hive factory burned down. It was a complete loss, amounting to over $3,000, as I had no insurance on it. I will rebuild at once and put in new machinery, but it will be three weeks before I can fill any orders.

Tin Rests for Frames.—A subscriber makes the following request:

On page 102, Mr. G. M. Alves describes a **T**-shaped tin rest for his reversible frame. I have found great difficulty in trying to get at something speedy and simple with which to make them. If Mr. A. or any other correspondent of the BEE JOURNAL will kindly suggest some plan, through the columns of the BEE JOURNAL, I will consider it a very great favor.

Severe Winter for Bees.—Thos. Gorsuch, (50—70), Gorsuch, ⊙ Pa., on Feb. 27, 1885, writes thus:

I have read the different opinions and remedies for the bee-diarrhea, yet I have not been able to discover the real cause or cure. I am of the opinion that it is with the bees as with poultry—mixing up different races makes them more susceptible to disease. This has been a severe winter for bees, yet mine are wintering well. They had a good flight on Feb. 25, and out of 70 colonies only 2 have died. I prepared one colony as requested by Mr. W. F. Clarke, in order to give his theory a trial, and so far it is ahead as regards quietness, cleanliness and loss of bees, the only trouble being that the bees would get down into the "hopper" and get lost; but I remedied this by putting a wire-screen on a slide on the lower end. I winter my bees on the summer stands, which I much prefer to cellar wintering.

Losses will be Heavy.—7—A. D. Stocking, (65—80), Ligonier, Ind., on March 3, 1885, says:

This has been a very severe winter—said to be the severest in 40 years—and it has been hard on the bees, and the losses are going to be the heaviest ever experienced in this section. Those who did not prepare their bees for winter will lose all, or nearly all. Owing to poor health last fall, I could not prepare all my bees for winter, and I shall lose quite heavily. Those that were prepared are apparently all right yet. We had two fine, warm days last week, and the bees had a good flight, and there did not appear to be much diarrhea. I covered the ground around my hives with straw, to keep the bees from the snow as much as possible.

Pleased.—S. Hinman, (49—72), Dundonald, Ont., writes thus:

I have taken the Weekly BEE JOURNAL since it began, and I am very much pleased with it. I have nearly every number on hand, and I have a special index, made by myself as it came along, of articles of interest to me, so that now I have a volume of authority on any subject in bee-culture of which I may need information in working my apiary, which I run in connection with my farm. I consider that the information which I have received from the BEE JOURNAL has repaid me many times over for the cost of procuring it.

Bees Dying Fast.—H. L. Wells, (17) Defiance, Ohio, on Feb. 23, 1885, writes thus:

This has been a terrible winter on bees and they are dying off very fast in this part of the country. However, so far, I have lost but one colony out of 18, and that was the result of an experiment. I tried to winter them on honey-dew and it proved unsuccessful. I use double-walled hives and feed plenty of sugar syrup. Several of my hives are pretty badly spotted, and if the weather does not get warmer in a few days, the consequences may not be very encouraging. A few bees flew to-day, for the first time in 6 weeks, and the greater part of the time the mercury was from zero to 28° and 30° below. I winter my bees on their summer stands.

Roses Among the Thorns.—James Heddon, Dowagiac, Mich., writes as follows concerning the results of the present winter:

"This is the winter of our discontent;" and this is also the winter that tests our various experiments. From the "thorns" of this unprecedented season, let us pluck the "rose" of truth regarding the cause of bee-diarrhea, if possible. I am confident that many are experimenting. Now, let us lay aside all prejudices and desires in the matter until we have carefully sifted the true relation between causes and effects. Let us remember that the true scientist follows truth, utterly regardless of where she leads. Recently I have twice examined my colonies, and while I, like others, have met with disaster and loss among certain divisions of my apiary, I am cheerful, with the firm belief that I have already sufficiently neared the goal of the problem of all apicultural problems, that I need not, in the future, lose any more colonies during winter. Later, full reports will be in order.

Local Convention Directory.

Time and place of Meeting.

1885.

Mar. 14.—Nemaha Co., at Johnson, Neb.
R. Corgell, Sec., Brock, Neb.

Mar. 26.—Tuscarawas Co., at New Philadelphia, O.
Geo. F. Williams, Sec., New Philadelphia, O.

April 3.—N. E. Kansas, at Hiawatha, Kans.
L. C. Clark, Sec., Granada, Kans.

Apr. 9, 10.—Western, at St. Joseph, Mo.
C. M. Crandall, Sec., Independence, Mo.

Apr. 11.—Wabash County, at Wabash, Ind.
Henry Cripe, Sec., N. Manchester, Ind.

Apr. 25.—Union, at Earlham, Iowa.
M. E. Darby, Sec., Dexter, Iowa.

Apr. 28.—DesMoines County, at Burlington, Iowa.
Jno. Nau, Sec., Middleton, Iowa.

May 4.—Linwood, Wis., at Rock Elm Centre, Wis.
B. Thomson, Sec., Waverly, Wis.

May 7.—Progressive, at Bushnell, Ills.
J. G. Norton, Sec., Macomb, Ills.

May 28.—N. Mich. Picnic, near McBride, Mich.
F. A. Palmer, Sec., McBride, Mich.

June 19.—Willamette Valley, at La Fayette, Oreg.
E. J. Hadley, Sec.

Dec. 8—10.—Michigan State, at Detroit, Mich.
H. D. Cutting, Sec., Clinton, Mich.

☞ In order to have this table complete, Secretaries are requested to forward full particulars of time and place of future meetings.—ED.

Special Notices.

☞ The books of the Bee-Keepers' Supply Co., of New Comerstown, O., were opened on Monday, Feb. 23, and at this writing (Feb. 27), nearly one-half of the stock is subscribed for. Stock has been taken by bee-keepers from 8 different States. Those who have not received a letter of information as to the management of this Company, will confer a favor by sending their names and addresses to the above Company.

Mr. Shoemaker, the manager, says: "Having been advised by some of the leading bee-keepers of the United States, I have organized the above Company, for the following reasons: In the 1,500 shares, we expect to have at least 1,000 bee-keepers interested, and it is specially desired that each stock-holder sell our goods in the community where he resides, to whom will be given special rates. Being supplied with sufficient capital, we can buy our lumber by the cargo, and thus not only supply ourselves with goods at a low price, but we can supply thousands of others, and thereby save money on our own goods, besides making a good profit on the amount we have invested in stock. This Company was organized for profit to its stock-holders, and will be controlled by them."

CLUBBING LIST.

We will supply the **American Bee Journal** one year, and any of the following Books, at the prices quoted in the last column of figures. The first column gives the regular price of both. All postage prepaid.

	Price of both.	*Club*
The Weekly Bee Journal,	**$2 00**	
and Cook's Manual, latest edition	3 25	3 00
Bees and Honey (T.G.Newman) cloth	3 00	2 75
Bees and Honey (paper covers)	2 75	2 50
Binder for Weekly Bee Journal	2 75	2 50
Apiary Register for 100 colonies	3 25	3 00
Dzierzon's New Bee Book (cloth)	4 00	3 00
Dzierzon's New Book (paper covers)	3 50	2 75
Quinby's New Bee-Keeping	3 50	3 25
Langstroth's Standard Work	4 00	3 75
Root's A B C of Bee Culture (cloth)	3 25	3 10
Alley's Queen Rearing	3 00	2 75
The Weekly Bee Journal one year		
and Gleanings in Bee-Culture (A.I.Root)	3 00	2 75
Bee-Keepers' Magazine (A.J.King)	3 00	2 75
Bee-Keepers' Guide (A.G.Hill)	2 50	2 35
Kansas Bee-Keeper	3 00	2 75
The Apiculturist, (Silas M. Locke)	3 00	2 90
The 6 above-named papers	6 50	6 00

THOMAS G. NEWMAN,
925 West Madison Street., Chicago, Ill.

☞ Our rates for two or more copies of the book, "Bees and Honey," may be found on the Book List on the second page of this paper. Also wholesale rates on all books where they are purchased "to sell again."

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☞ We often get a number of notices and advertisements on Mondays, intended for the next BEE JOURNAL. As we close the forms on Saturdays, all such notices *must be here* on Saturday morning, or cannot appear until the following week.

☞ The Tuscarawas County Bee-Keepers' Association will meet at New Philadelphia, O., on Thursday, March 26, 1885. A cordial invitation is extended to all.

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